

February 11, 1994

Dear Colleague:

Attached is a Research Bulletin from INPUT's Information Services Market Analysis Program. We've received such an enthusiastic response to this bulletin that we've decided to send it to subscribers of other INPUT programs as well. It offers a 20-year retrospective of the information services industry, which we thought you might find interesting.

We welcome any comments that you have on this document, or any of INPUT's publications.

Sincerely,

Bob

Robert L. Goodwin
Vice President

Enc.



February 11, 1994

Dear Colleague:

Attached is a corrected version of INPUT's recent Research Bulletin (January 1994) offering a retrospective of the Information Services industry.

There was a minor error in the copy which you recently received, which has been corrected as noted below:

- *Error* - On page 5, we stated that "the forecasts made five years prior to each of the last six INPUT annual reports ... have slightly underestimated the market by 5% to 17%."
- *Correction* - As you can see in Exhibit 3, the correct wording should have been "... have slightly overestimated the market by 5% to 17%.

Our accuracy on long-range forecasts, however, remains unchanged at 83% to 95% of the actual market size.

We've received such an enthusiastic response to this bulletin, that we're enclosing an extra copy for your use or to share with members of your staff.

As always, if you have any questions or comments on this bulletin, or any INPUT document, please call me at (415) 961-330, or write to the address on this letterhead.

Sincerely,



Robert L. Goodwin
Vice President



Clients make informed decisions more quickly and economically by using INPUT's services. Since 1974, information technology (IT) users and vendors throughout the world have relied on INPUT for data, research, objective analysis and insightful opinions to prepare their plans, market assessments and business directions, particularly in computer software and services.

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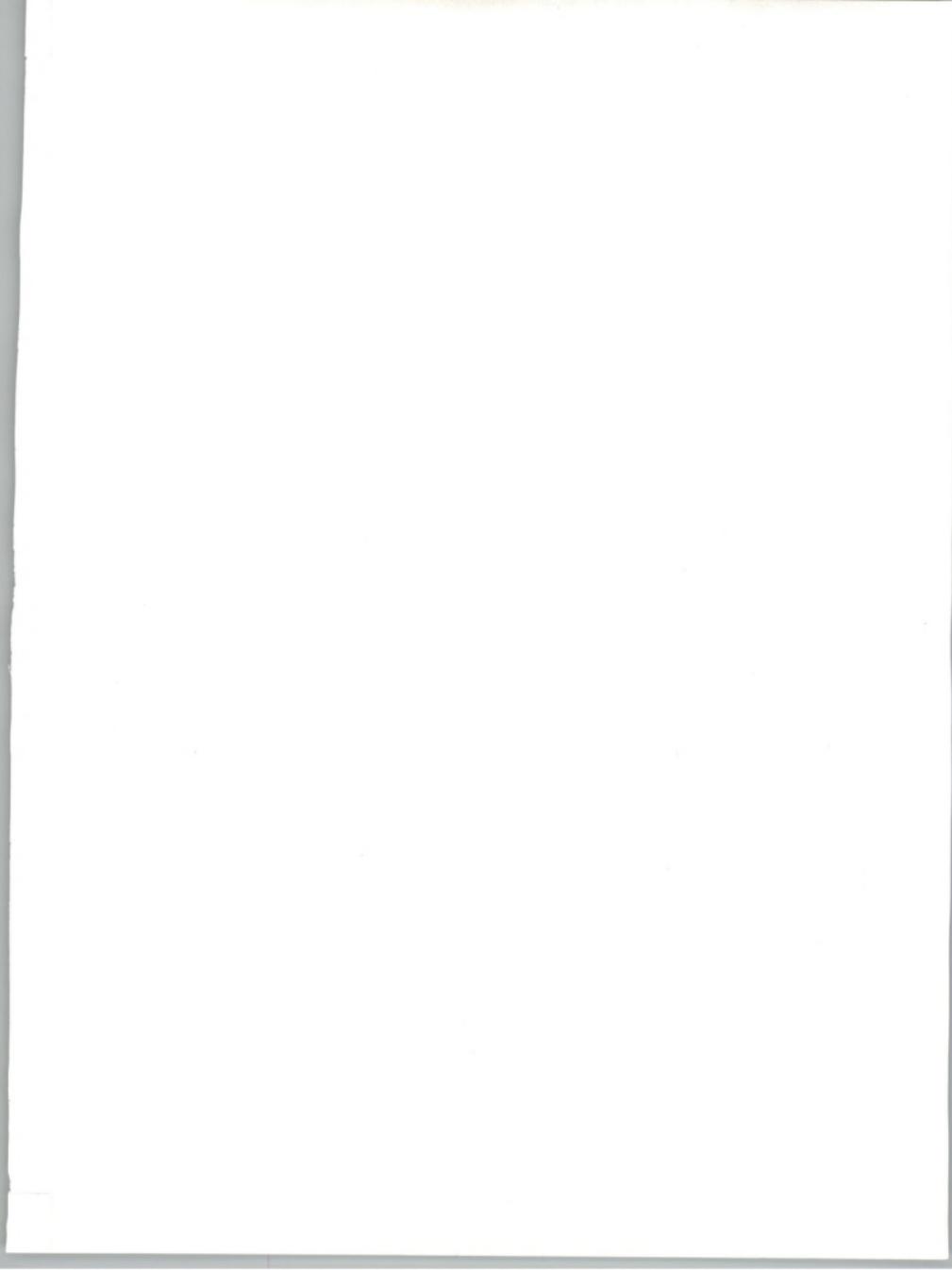
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Information Services—Then and Now

An INPUT Retrospective

In 1994, INPUT will celebrate its twentieth anniversary as a market research company. And what a 20 years it's been. Formed in 1974, INPUT was present at the birth of the information services industry, and since then we have enjoyed participating in what has been one of the most explosive periods of growth in both technology and American business.

This growth has been fueled by a serendipitous congruence of technological sophistication, economic stability, investor confidence, global awareness, and an easing of regulatory constraints, to the extent that today we speak of global markets, competition in the telecommunications marketplace and the almost limitless possibilities inherent in the communications and computing technologies now available to us - or just over the horizon.

American business takes terminals and workstations for granted, and in fact, many people, at all levels of business activity, could probably not perform their

job effectively without them. In decades past, we talked of computer literacy as a goal for American business. Not to worry. There's now a generation of students who regard a computer keyboard or mouse as a logical extension of their hand - just another tool, like the pencils and erasers of a prior generation. (*Note: An "eraser" is a device which performs the same function on a graphite recording that the Backspace or Delete key performs on a digital image.*)

Being a participant in the growth of the information services industry for the last 20 years has been exciting, challenging and rewarding. INPUT looks forward with confidence and enthusiasm to the millennium and the next 20 years.

This first Market Analysis Program research bulletin for 1994 examines the overall growth of information services, as measured by the U.S. market size and growth rates. As we do with our annual reports, INPUT also considers the five-year market size forecasts made during the last ten years (1983 to 1992), and notes how

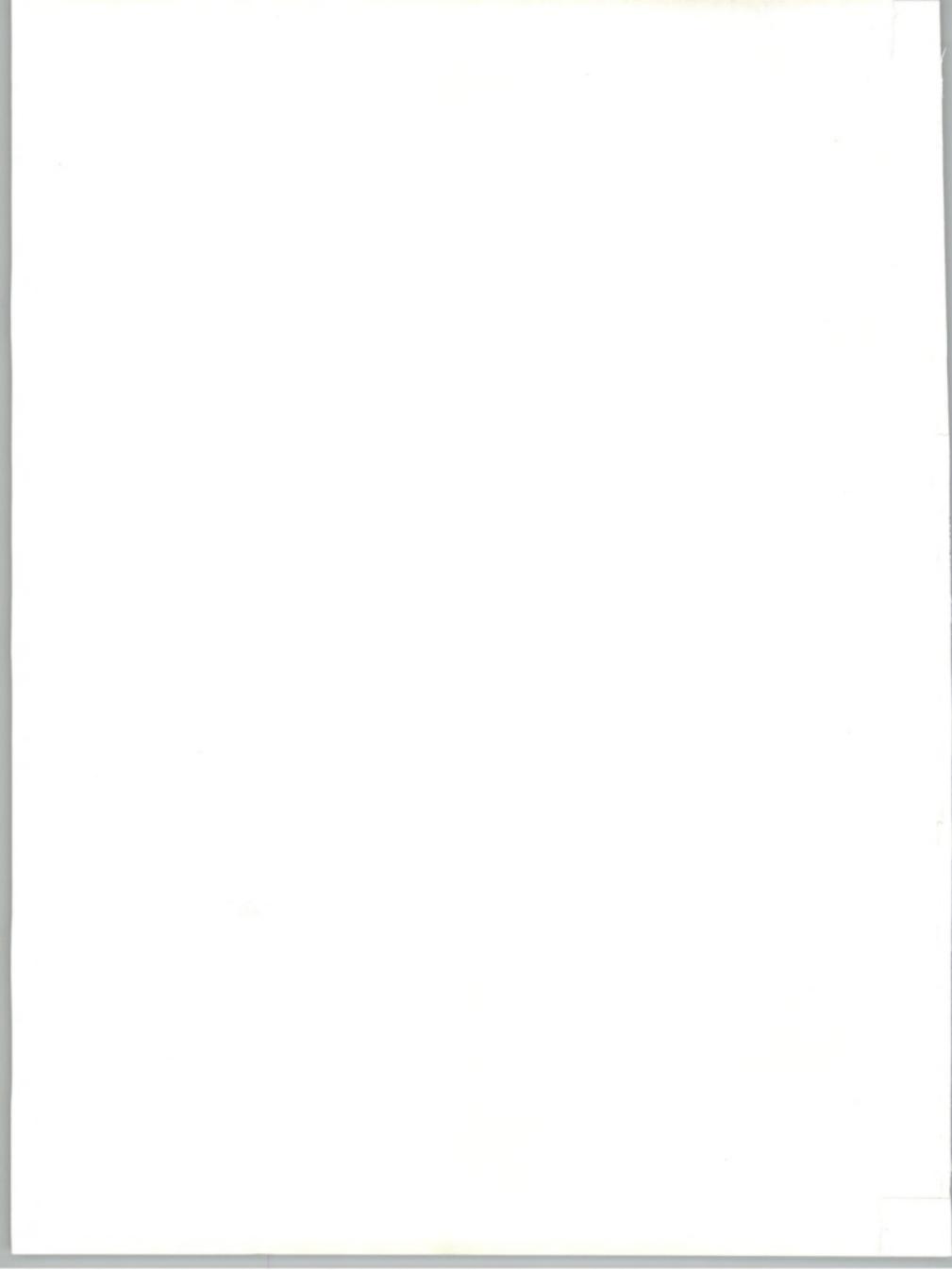
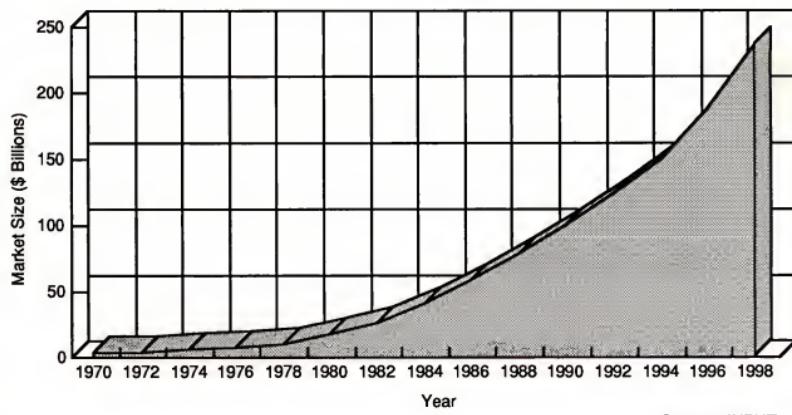


Exhibit 1

Information Services Market, 1970-1998

Source: INPUT

the actual numbers recorded five years later varied from the original forecast.

The bulletin also notes the issues, concerns and forecasts made in the first of our annual information industry reports (1976), and considers how those observations compare to today's reality.

In the coming year, other INPUT Research Bulletins will continue to review the history of the information services industry, noting key events, market size and growth, changes in industry direction, and its competitive dynamics.

Industry Growth—Good and Steady

INPUT's archives show a fledgling information services industry just emerging in 1970 (the earliest year for which we have records), with a total U.S. market size of \$3.2 billion. Exhibit 1 notes how the market has grown since then.

INPUT's Market Analysis Program tracks the information services industry and provides five-year forecasts of market growth. The 1993 forecast shows a current market size of \$136 billion, growing to almost \$237 billion by 1998. Extending the 1998 year-to-year growth rate of 11% to the year 2000 results in an annual market of almost \$292 billion by the millennium. To assess the magnitude of growth since 1970, consider that in 1993 the information services market was 43 times its size in 1970, and will be 90 times as large as the 1970 market by the year 2000. The figures and the growth chart speak for themselves. The information services industry is healthy and continuing to grow at a steady pace.

Exhibit 2 shows the five-year compound annual growth rates (CAGR) from 1975 through 1994. These figures were derived by taking the actual market size numbers

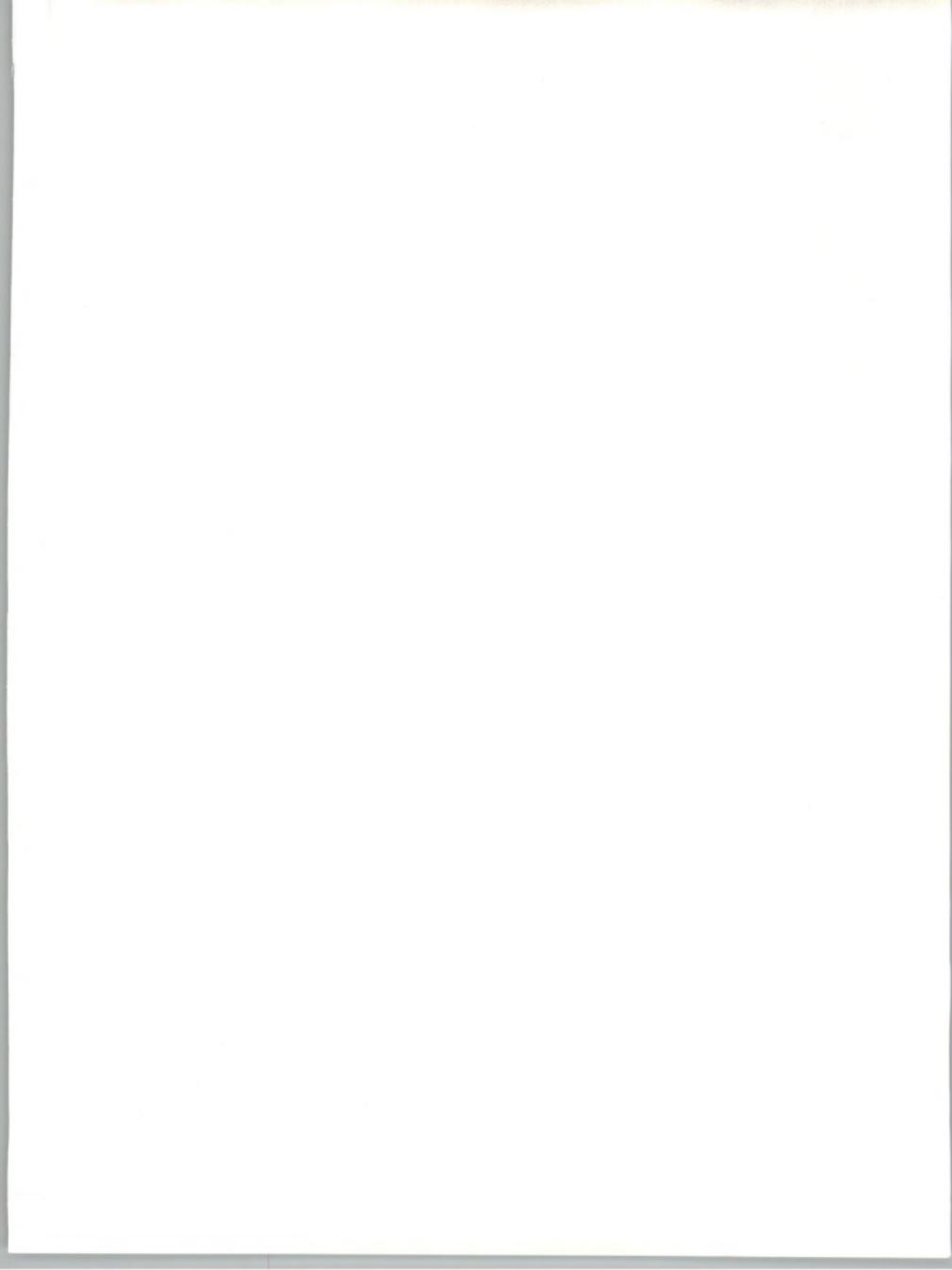
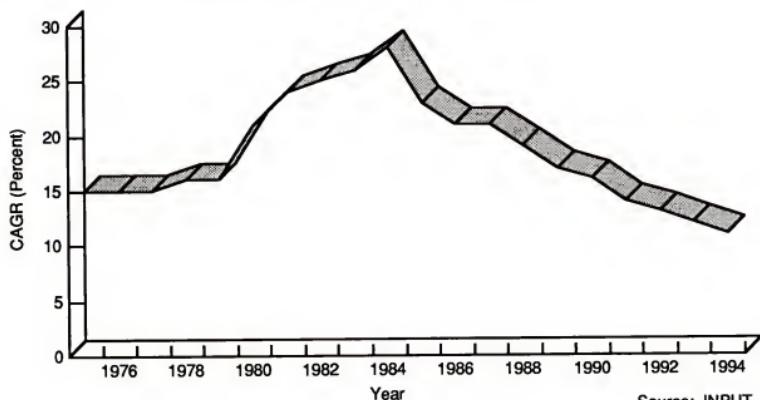


Exhibit 2

Information Services Market: 5-Year CAGR



Source: INPUT

used for Exhibit 1, and determining compound annual growth rates for five-year periods starting with 1970 to 1975 and ending with 1989 through 1994.

The figures show some flattening, at a 15% to 16% CAGR, from 1975 through 1979, as the industry stabilized and moved through the slow economic period in the mid-1970s. Aggressive growth returned in the late-1970s and lasted through 1984, when it peaked at a five-year CAGR (for 1979 through 1984) of 28%. Since then, as a result of the steady increase in the size of the market and the leveling effects of inflation, the sliding five-year CAGR declined to 23% in 1985 and has slowed to 11% in 1994 (for the period 1989 through 1994).

The 11% figure for 1989 through 1994 occurred during the recent prolonged period of severe economic slowdown, and is a very respectable growth rate that reflects

the fundamental strength of the information services industry — even during periods of economic uncertainty. INPUT currently estimates the projected five-year CAGRs through 1998 will be in the 11% to 12% range, with stronger growth occurring as the year 2000 approaches and businesses position themselves for a fast start in the new millennium.

From the viewpoint of long-term growth, the increase from \$3.2 billion in 1970 to \$236.7 billion in 1998, yields a phenomenal 28-year CAGR of 17%.

Considering the ups and downs of the economy over the last two decades, the wide swings in inflation rates and growing competition from off-shore service providers, the U.S. information services industry has proven itself to be a solid, steady component of the American (and worldwide) economy.

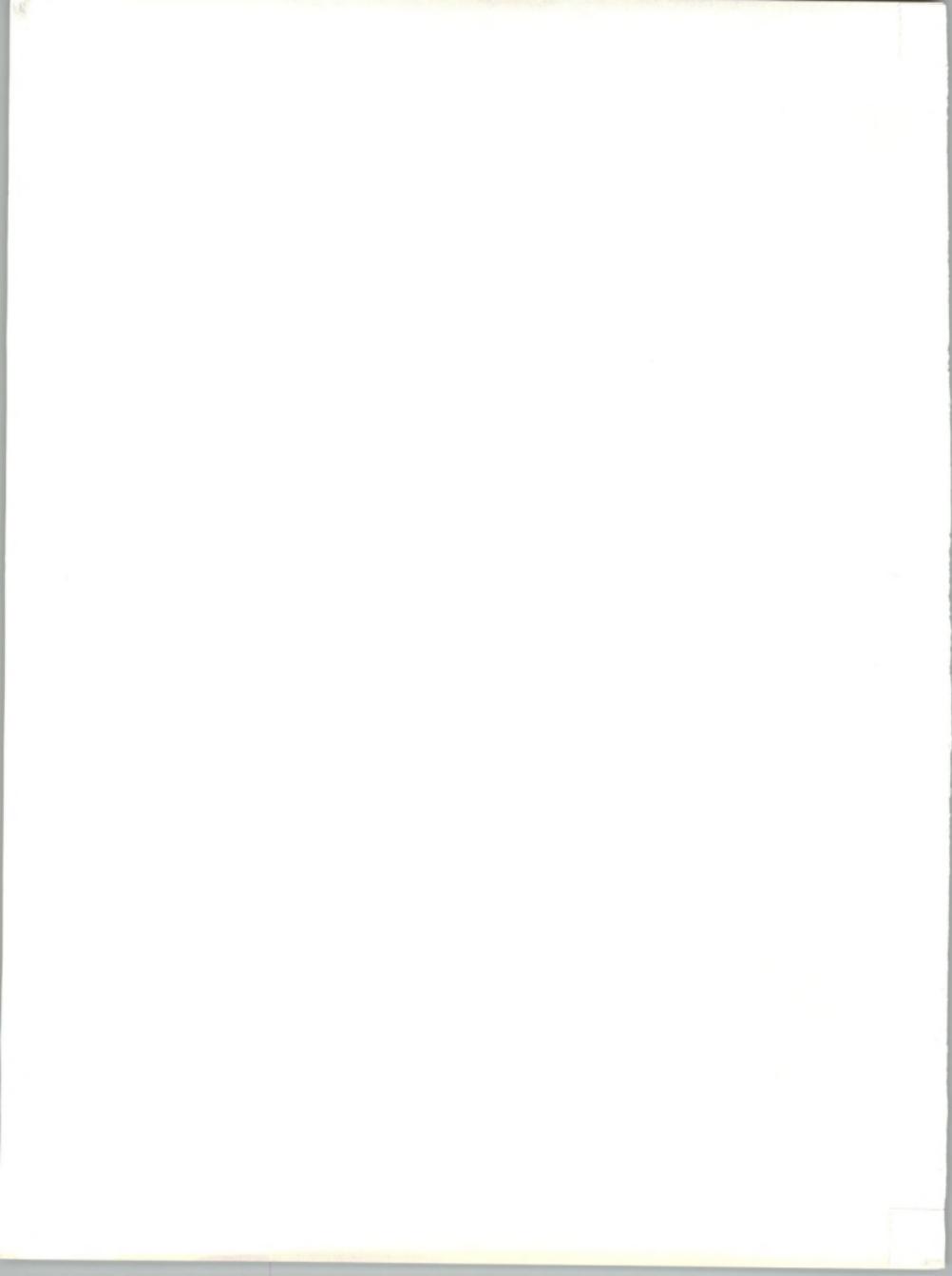
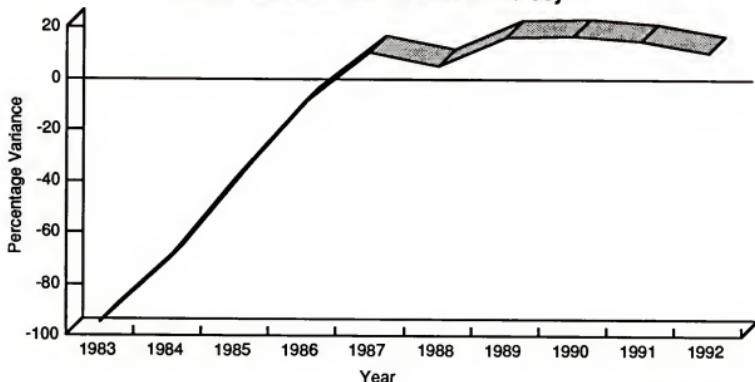


Exhibit 3

INPUT 5-Year Market Forecast Accuracy

Source: INPUT

INPUT's Report Card

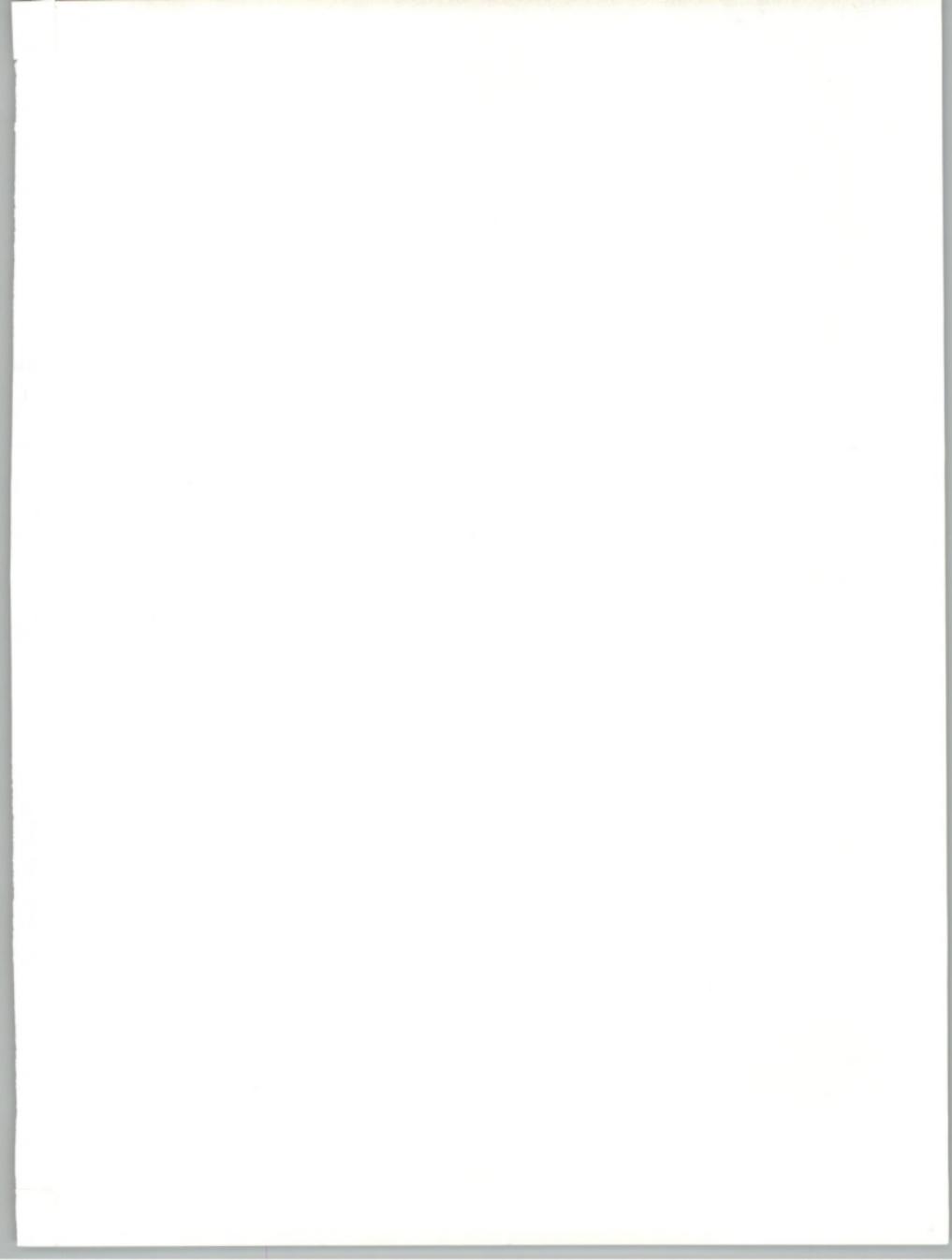
INPUT has always maintained that if you are in the business of forecasting market size, you should periodically evaluate how well you are doing. In the Market Analysis Program, INPUT does this yearly for each of its annual industry and market reports. The actual values for last year, and the final year of last year's five-year forecast, are compared to the values for those years in this year's forecast and significant differences are explained. This evaluation, called our MAP Database Reconciliation, is contained in the appendix at the end of each market report. We call it our report card.

As part of this retrospective, we decided to look at the total U.S. information services market five-year forecasts published by INPUT for the last ten years. We considered only the fifth year of each

forecast—e.g., the year 1983 in the 1978 report, *U.S. Information Services Market: 1978-1983* — so we could determine our performance on long-range forecasting. We evaluated every forecast where we could determine a fifth year actual market size. We then compared the actual market size to the forecast market size to determine how well we did. The results are summarized in Exhibit 3.

Values below the X axis show that in a forecast for that year (made five years before the year noted on the chart), we underestimated the market's size. Values above the X axis indicate that five years earlier, we overestimated the market size for those years.

As can be seen from the chart, the market consistently grew faster than we estimated in the early years, frequently growing to twice the size we had forecast five years



earlier. Contributing to our underestimation of the market's long-range performance was the explosive growth of the industry, rampant inflation (remember CD's that paid a 15% yield to maturity?), and the series of economic perturbations occurring during this period. As the industry stabilized in the early- and mid-1980s, our forecasts improved as a result of that stability and also as a result of our having a larger historical database and better forecasting techniques.

The forecasts made five years prior to each of the last six INPUT annual reports on information services industry size, have slightly overestimated the market by 5% to 17%. Stated another way, our long-range forecast accuracy varied from 83% to 95% of the actual market for the last six years. Given the complexity and growth of the information services market, and the fact this performance occurred during the longest period of economic slowdown for U.S. industry since the second World War, INPUT is pleased that the accuracy of its long range market forecasts has averaged 88% over the last six years. And we expect it to get better.

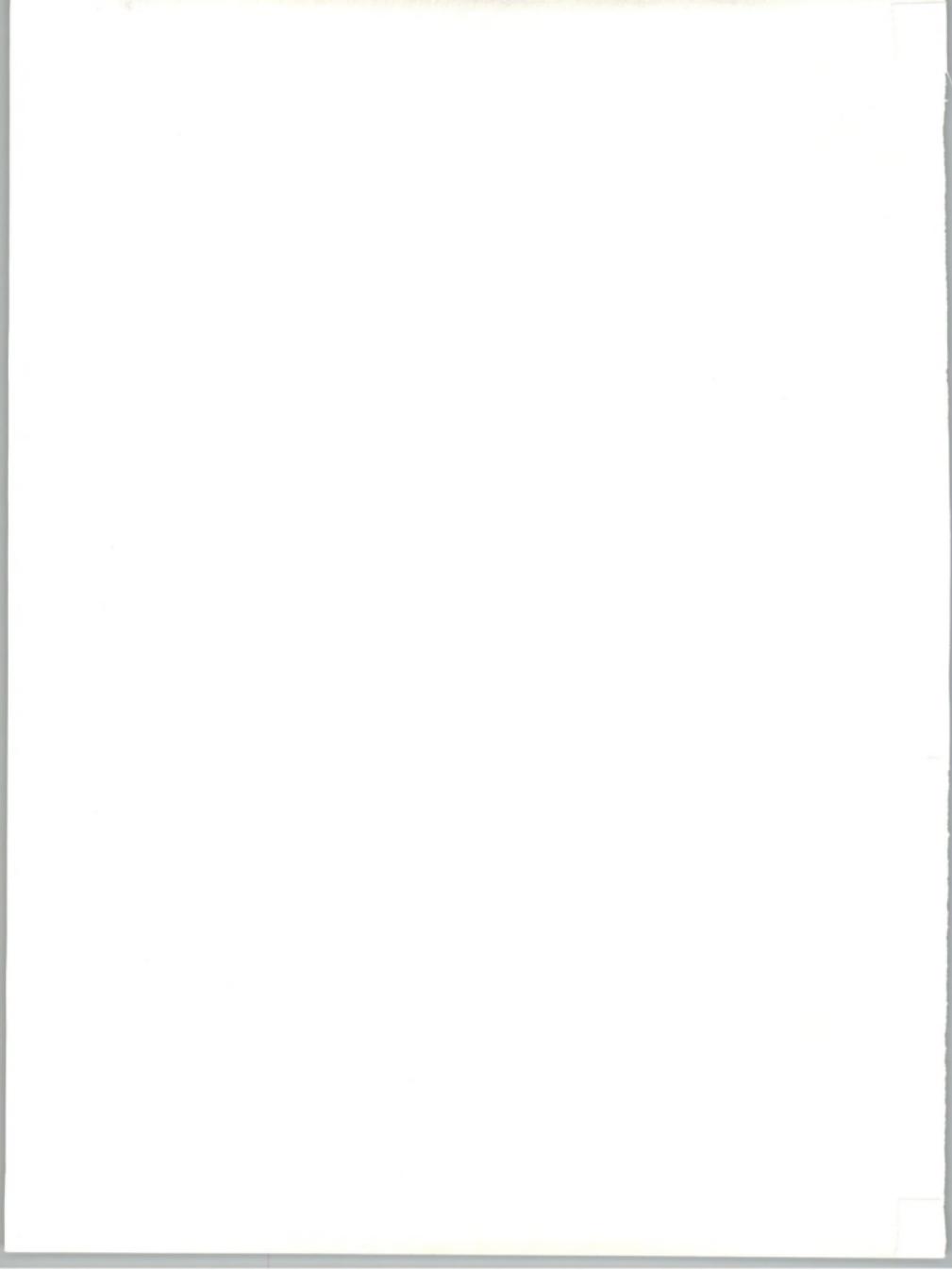
History 101a - The Information Services Industry in 1976

In INPUT's first annual report to its clients, issued in 1976, we noted the following industry trends, events and issues. INPUT's 1994 observations are contained in the parenthetical comments following each entry:

- The main limitation on industry growth was the ability to acquire, train and retain skilled personnel. (*Still a*

significant factor for newly emerging skills such as business integration proficiency, but the pool of resources has grown dramatically since 1976.)

- Software availability was identified as a limitation. Users were advised to develop their own applications software. (*They did, at first on their own, and eventually with the help of the professional services firms. Today, the professional services software development market is approaching \$14 billion. Nice growth!*)
- Batch processing and professional services were regarded as unexciting and unprofitable when compared to the darling of the 1970s—remote computing services—e.g., timesharing and remote batch services. INPUT disagreed with this belief and felt both batch processing and professional services offered a major opportunity. (*Pure batch processing never did achieve a significant position in the market, but WOW! how professional services grew and grew and grew! To almost \$23 billion in 1994.*)
- Vendors were advised to maintain an image of technical expertise and reliability if they wished to grow. (*Today, INPUT research shows users select vendors with the best technical and industry knowledge and the best reputation. Today, as then, it's a major competitive advantage for a vendor to have demonstrable knowledge of an industry or technology and a reputation for doing good work. Fundamental truths never change.*)

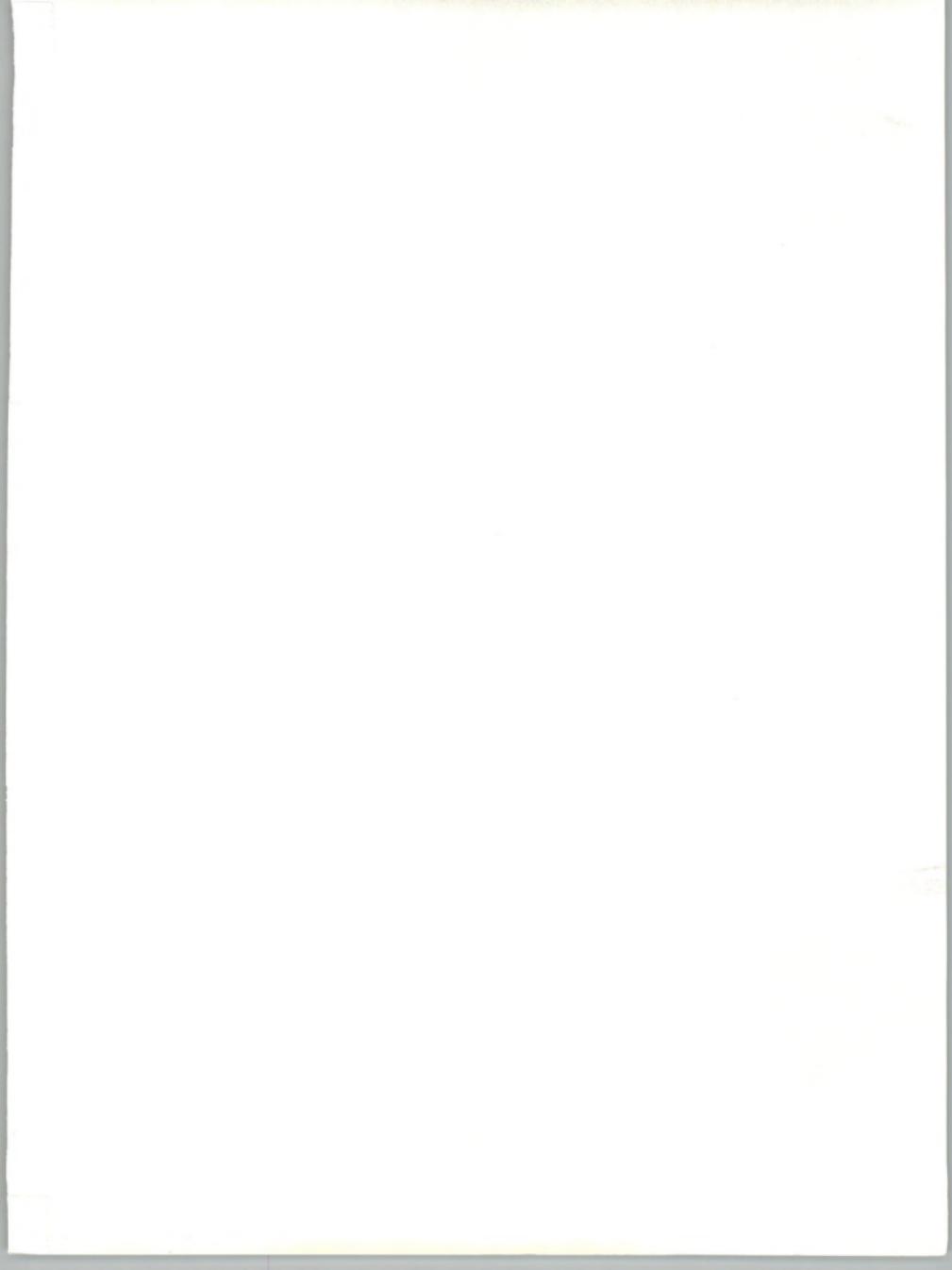


- The main competition for services companies was expected to come from in-house processing. (*And, in truth, it did for many years as IT managers decided whether to invest budget dollars in internal resources or outside services. Today, however, the IT manager is defending why corporate dollars should support an expensive internal dedicated resource when cost-effective outside services offer to fix costs, guarantee reliability and ensure both growth and the availability of the latest technology for their client's use. In addition, the IT manager must now compete with the departmental users who also want to determine how their IT needs are to be satisfied.*)
- Facilities management (FM) will depend upon the importance of EDP to an industry. Logical candidates for long-term FM (*now called outsourcing*) growth include the banks and insurance companies because of their dependence upon information management. (*Today, the banking and finance and insurance industries are the first and third largest users of outsourcing services, of the fifteen industry markets followed by INPUT. Enough said.*)
- Word processing and data processing will be combined (*said INPUT's annual report in 1976*), creating an information processing environment with opportunities for new software products. (*Talk about understatement! First there were dedicated systems like WANG and the IBM Mag Card Selectric, then mainframe-based systems such as IBM's PROFS, and finally PC-based systems.*

Today, word processing and data processing are almost completely merged, especially in environments such as Microsoft's Windows or client-server systems. Most word processing now takes place on networked PCs with E-Mail links and spreadsheet and database access. Yes, there are certainly opportunities for new software products!

- INPUT stated that because of changes in hardware, computer services companies would have to take an active and creative role in specifying and using the hardware, as opposed to being reactive (*as was the case in 1976*). This admonition applied to mainframes, terminals and peripherals. (*This was INPUT's first identification of a systems integration need. In 1994, SI is an \$11.5 billion industry.*)

It's always enlightening, and sometimes humbling, to see how well advice and conclusions, formed 18 years ago, have stood the test of time. In general, we're satisfied with most of our early predictions and advice and believe the information services industry has grown pretty much the way INPUT, and others, felt it would. There were, of course, a few areas in which our observations were not as accurate as we would have liked. For instance, the batch processing market never represented a major opportunity, as we had thought, and competition for information services now also comes from other information service alternatives, and not just the internal IT department. Oh well....



More to Come

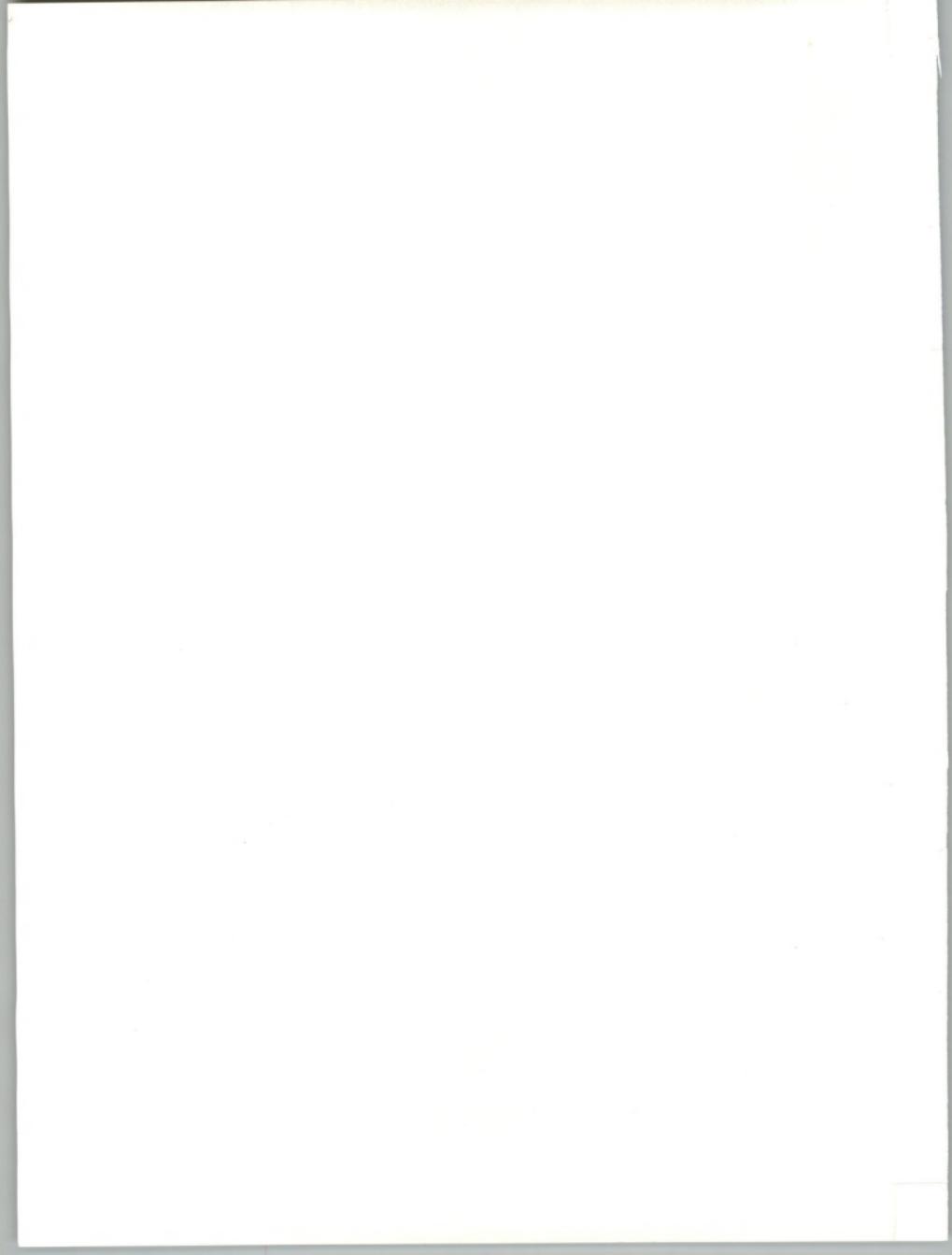
INPUT hopes that you have enjoyed this retrospective and the industry size and growth figures are useful to you in your own analyses of market or industry history.

In the coming year, INPUT plans to issue two or three additional Research Bulletins that reprise this wonderful information services industry in which each of us is a player. For instance, we'll consider the competitive dynamics over the years and look at key industry players, then and now.

INPUT looks forward with pleasure, anticipation and a bit of excitement to see what the information industry will accomplish over the next 20 years. We expect that you do too.

This Research Bulletin is issued as part of INPUT's Information Services Market Analysis Program
If you have questions or comments on this bulletin, please call your local INPUT organization
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